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ABSTRACT

This report presents a description and evaluation of the Nature-Computer Camp (NCC), an environmental and computer science program designed for sixth grade students in the District of Columbia public schools. Among the major components of the program were: planning for administration of operating the camp and for instruction in environmental science and computers; staff characteristics; staff development; record keeping procedures; scheduling; materials and supplies; academic curriculum (content and process); instructional process; and the socio-emotional curriculum (attitudes and skills). Observations of inputs for these program components revealed that the only problem encountered was lack of adequate materials and supplies. Overall, the implementation was completed with minimal problems. In addition, all program objectives were attained. These objectives included: a significant gain in knowledge in the areas of stream ecology, woodland ecology and geology, and in knowledge about computers; maintenance or an increase of a positive attitude toward the program; and demonstration of appropriate socialization using a set of social expectations established by staff and student campers. Supporting documentation (including evaluation model schema, data analysis summaries, camp schedules, and samples of expected social behaviors) is included in appendices. (JN)

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DISTRICT OF COLUMBIA PUBLIC SCHOOLS

E.C.I.A. CHAPTER 2

NATURE-COMPUTER CAMP

FINAL EVALUATION REPORT

DECEMBER 1983

FLORETTA D. McKENZIE
SUPERINTENDENT OF SCHOOLS

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PUBLIC SCHOOLS OF THE DISTRICT OF COLUMBIA

THE NATURE-COMPUTER CAMP

Final Report

1982-1983

Prepared by
Division of Quality Assurance

1982-1983

THE NATURE-COMPUTER CAMP

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Summary and Findings

Title

The Nature-Computer Camp

Project Coordinator

Dorothy Elaine Barton

Project Location

Camp Round Meadow; Thurmont, Maryland

Target Population

Sixth grade students from the District of Columbia Public Schools

Background

Beginning in 1971, the DCPS, the National Park Service and in 1973, the U.S. Office of Education have co-sponsored the Round Meadow Environmental Laboratory School in which students from the fifth grade (in 1971) and thereafter, sixth grade (1972-1983) were provided an opportunity to reinforce their knowledge and skills on environmental science. This year, a new addition of the curriculum was a computer science component, hence the new title of the program, Nature-Computer Camp.

Stated Objectives

A: By July, 1983, a Nature-Computer Camp combining science and computer skills for the District of Columbia Public School sixth graders, will be established at Camp Round Meadow, Thurmont, MD.

B: At the completion of the week in the Nature-Computer Camp program, participants will demonstrate a significant gain in knowledge in the areas of stream ecology, woodland ecology and geology, and in knowledge about computers.

C: At the completion of the week in the Nature-Computer Camp Program, at least 80% of all participants will show maintenance or an increase of a positive attitude toward the program.

D: Using a set of social expectations established by the staff and student campers, campers will demonstrate appropriate socialization.

Evaluation

The evaluation follows the Planning, Monitoring, and Implementing (PMI) Evaluation Model for Decision-Making which was developed by the Division of Quality Assurance, District of Columbia Public Schools.

Findings

1. The Project Manager, Project Coordinator, and Camp Manager planned the Nature-Computer Camp (NCC) using as a frame of operation the plans that were established for the former Round Meadow Outdoor Environmental Laboratory School, the sixth grade CBC science curriculum, and the DCPS objectives on computer literacy as expressed in the Five-Year Computer Literacy Plan.

2. Among the major components of the program were: (1) the planning for the administration of the operation of the camp and for the instruction of environmental science and computers; (2) staff characteristics; (3) staff development; (4) record keeping procedures; (5) scheduling; (6) materials and supplies; (7) the academic curriculum (content and process); (8) the instructional process; (9) the socio-emotional curriculum - attitudes and social skills.

3. For these program components, observations of inputs revealed that the only problem encountered was the lack of adequate materials and supplies. The camp staff was, however, ingenious and creative in the development of materials or the adaptation of available materials to meet program objectives. Ingenuity was also manifested in the use of the human resources available to resolve unexpected problems such as having members of staff acquire bus driver licenses to operate the in-camp bus.

4. Overall, the implementation was done with minimal problems. Program outcomes were all attained. Data analysis for the outcomes revealed the following:

   a. Ninety-seven percent of the teachers rated the training provided as good or better on selected criteria.

   b. There was a highly significant gain in knowledge about environmental science ($N = 336$, $t = 10.91$, $p < .001$) and computers ($N = 336$, $t = 7.48$, $p < .001$).

   c. There was a significant improvement in student attitude towards the program ($N = 336$, $t = 17.7$, $p < .001$). Ninety-nine percent (99%) of the students showed an increase of a positive attitude towards the program.

   d. Post-assessment scores on counselor checklists showed that students demonstrated appropriate socialization (mean score, 85%), using as guidelines a set of social expectations established by the staff and student campers.

BACKGROUND AND PROJECT DESCRIPTION

Introduction

Purpose - The purpose of the Nature-Computer Camp (NCC) was to provide selected 6th grade District of Columbia Public Schools (DCPS) students with the opportunity to reinforce their knowledge of environmental science and to acquire skills in computers.

Need - Economically disadvantaged students who are residents of large urban areas generally have limited experiences or direct contact with the natural environment. The NCC program was designed to reduce geographical isolation of urban youngsters and to provide them with the opportunity to live and learn through first-hand contact with nature and thereby develop an appreciation of their environment and an awareness of environmental problems. In line with the objectives of the school system in regard to computer literacy, the program also sought to develop skills in this area. It also provided students with the opportunity to meet DCPS students from other schools and to improve their social and interpersonal skills.

History -The NCC traces its origin to the Round Meadow Outdoor Environmental Laboratory School. This school was operated at Camp Round Meadow from 1971 under the sponsorship of the National Park Service, the Science Department of the DCPS and later on in 1973, the Emergency School Aid Act of the United States Office of Education when it was striving to reduce the effects of minority group isolation. The program has focussed on environmental science with an emphasis on woodland ecology, stream ecology, and geology. Emphasis was placed on content as well as process. While these components of the curriculum were retained, a component on computer literacy was added to this year's program thereby giving it a two-fold focus on science and technology. In so doing, the program sought to meet the objectives of the DCPS on computer literacy as well as the national acclaim for increasing minority participation and interest in science and technology.

Description of the Project

The NCC was an environmental and computer science program designed for sixth grade students in the D.C. Public Schools. The program was implemented at Camp Round Meadow, on the Catoctin Mountains in Maryland. The program components were as follows:

Planning: The management/administrative staff, made up of the Project Manager, Project Coordinator, and Camp Manager performed the following functions: disseminated information about the camp; determined enrollment procedures and provided registration and physical evaluation forms to principals as requested; reviewed and revised or updated all instructional/curriculum materials previously used at the camp; developed the schedule for

the six one-week sessions, scheduled selected participants and notifed them of dates of attendance; determined needed materials and supplies and ordered materials as needed, or borrowed them as in the case of computers; approved or sought approval of cooperative agreement and lease with the U.S. National Park Service for use of the camp facilities, and food service contract with vendors; arranged for bus service for transportation to and from the camp as well as within the camp; and approved the design for the evaluation of the program.

Staff Selection and Development: The instructional staff was made up of five teachers and nine aides. The teachers had qualifications in the specialty areas of the program. The aides were graduate and undergraduate students who have had experience working with children. One of the aides was a special education aide. Aides performed counseling duties and monitored student socio-emotional adjustment. Teachers and aides attended a three-day workshop prior to the opening of camp. The workshop was conducted by the administrative staff.

Scheduling: The program was scheduled to operate for six weeks during the summer, from May through July. There were six sessions, each one lasting for one week.

Record Keeping: Project staff all kept records of activities.

Materials and Supplies: Besides the materials needed for the study of environmental science such as measurement instruments, the program used twenty computers which were borrowed from the Junior High School Science Computer Program and buses to carry participants from and to camp and buses for in-camp transportation to the various trails.

Academic Curriculum: The environmental science curriculum was focussed on woodland ecology, stream ecology and geology. There was focus both on content as well as on the processes of scientific inquiry to include the application of measurement principles in data collection, problem solving techniques during investigation, organizing, classifying, recording and interpreting data and making abstractions, inferences and conclusions. In the computer science curriculum students received information on the history of com-puters, learned to write a simple program, identified the hardware components that make up a computer, participated in discussions involving the impact of computers on society, computer-related careers and the effect of computers on careers.

Recreational Curriculum: Students selected extra-curricula activities in their areas of interest.

Socio-emotional Curriculum: In "rap sessions", counselors held discussions with students on expected social behaviors and interpersonal relations. Personal problems were also discussed with the objective of increasing socio-emotional maturity, adjustment, social skills, and the development of a positive attitude towards the program. The development of the latter was also promoted by teachers as they sought to present their materials in a varied and interesting fashion and to establish an amicable relationship with the students.

Instruction: The focus of instruction in environmental science was on the reinforcement of the knowledge acquired in the sixth grade and on actual hands-on experiences. The major part of the instruction occured on the trails. In the computer sessions, lectures and hands-on experiences prevailed. The computer sessions were held indoors. Instruction was individualized according to student level and pace of learning.

Students: The majority of the students were sixth grade students who completed the sixth grade curriculum, who received parental consent to participate and who had health insurance coverage. A limited number of special education students (less than ten per week) were also participants.

Testing: Assessment was conducted of (1) the staff perceptions of the usefulness and effectiveness of the staff development sessions; (2) student academic gains in environmental science and computers using the NCC Knowledge Test; (3) teacher evaluation of student mastery of objectives using the Teacher Checklist; (4) student change in attitude using the NCC Attitude Scale and (5) student gains in social-interpersonal skills using the Counselor Checklist. Pre- and posttesting were applied in assessing student academic gains and attitude change.

EXTERNAL EVALUATION DESIGN - PLANNING, MONITORING AND IMPLEMENTING (PMI) EVALUATION MODEL FOR DECISION-MAKING

The evaluation follows the Planning, Monitoring, and Implementing (PMI) Evaluation Model for Decision-Making which was developed by the Division of Quality Assurance, District of Columbia Public Schools. (See Appendix A.) The evaluation design which was developed at the beginning of the project year, consisted of the intended inputs, processes and outcomes on specially designed status report forms. The interim report distributed at the mid-point of the project cycle related, on the status report forms, agreements or discrepancies between intended and observed inputs and processes. This final report includes the interim report data brought up to date, plus the agreements and discrepancies between intended and observed outcomes for each objective. Supporting data are included in the appendix. Preceding the PMI status report forms is the results section which summarizes the agreements and discrepancies for each objective and states a general conclusion.

RESULTS

EVALUATION RESULTS - NARRATIVE SUMMARY

The results of the evaluation are presented in this section. Following the narrative are the inputs, processes and outcomes on which this summary is based presented in the PMI reporting format. Supporting data are in the appendix.

OBJECTIVE A: By July, 1983, a Nature-Computer Camp combining science and computer skills for the District of Columbia Public School sixth graders, will be established at Camp Round Meadow, Thurmont, MD.

Fourteen inputs were identified as necessary for the attainment of the objective. Twelve of these inputs were in place and acquired an agreement status on the evaluation design for project staff (i.e. Project Manager and Coordinator, Camp Manager and Teachers), support personnel such as elementary school contact persons, pre-enrollment of 80 regular students and 10 special education students for each of the six sessions of the program, a schedule of six one-week sessions, registration forms, physical evaluation forms, staff development evaluation instrument and camp area and facilities. Discrepancy was observed for the inputs of nine aides and adequate planning supplies and materials. There were seven aides and one special education aide. Camp personnel reported that the project ran well with the eight aides. The materials were ordered but were not delivered in a timely fashion. This tardiness interfered very little with the operation of the camp since the project staff showed initiative and creativity in the development of needed materials.

There was agreement for all nineteen processes identified on the reporting format. The project staff obtained approval for the cooperative agreement and lease with the U.S. National Park Service for use of the camp and facilities and requested this department to make arrangements for the transportation of the students. The project staff also approved food service contract with vendors, ordered supplies and materials, reviewed and updated curricula materials. The coordinator and staff also prepared and distributed registration forms and physical evaluation forms. Dissemination of literature to parents about the program was done through principals. With the help of a contact person at the school, the principal identified eligible students based on the results of physical examination, the availability of health insurance and the successful completion of the sixth grade curriculum. These students were notified of dates of attendance and were scheduled by the program staff.

Prior to camp opening, a three-day workshop was held for teachers and aides. At the end of the workshop participants completed an evaluation form. Project staff kept records of attendance and activities. Project teachers taught classes in geology, woodland ecology, stream ecology, and computers. They also administered tests and questionnaires. Aides performed counseling duties.

The three observed and intended outcomes for this objective were in agreement. The records submitted showed that the general administrative duties and planning necessary for establishing the NCC were accomplished and that the NCC was in operation for six five-day sessions. Analysis of the responses of staff members to the questionnaire revealed that 97% of the teachers rated the training as highly positive on five selected criteria.

OBJECTIVE B: At the completion of the week in the Nature-Computer Camp program, participants will demonstrate a significant gain in knowledge in the areas of stream ecology, woodland ecology and geology, and in knowledge about computers.

This objective required the same set of inputs as the previous one with the addition of five other inputs. Required for the implementation of the instructional component of the program were curricula for the four content areas identified, a program-designed test to measure knowledge of computers and of the three environmental science areas, twenty computers, an in-camp bus for transportation and three environmental trails. There was agreement for all of these inputs.

The instructional processes included lectures and discussion in the four content areas. Under the instruction and supervision of teachers, students applied the principles of scientific inquiry to include the application of measurement principles in data collection, problem solving techniques, identification, organization and classification of objects. Students also recorded and interpreted data. They made abstractions and inferences and drew conclusions from evidence provided. Students wrote computer programs, identified hardware components that make up a computer, read about or participated in discussions on the impact of computers on society, discussed computer-related careers, and received information on the history of computers and computing devices. Students completed both pre- and posttests on the three environmental science subtests and the computer subtest of the NCC Knowledge Test.

There were two outcomes focusing on student gains in knowledge about environmental science and computers. Both observed and intended outcomes were in agreement. The analyses of the environmental science and computer tests data were conducted using separate t-tests. The analyses revealed significant gains in computer skills ($N = 336$, $t = 7.48$, $p < .001$), in stream ecology ($N = 336$, $t = 9.13$, $p < .001$), in woodland ecology ($N = 336$, $t = 6.15$, $p < .001$), and geology ($N = 336$, $t = 7.67$, $p < .001$). Analysis of the test data for the latter three areas combined also showed significance at the .001 level ($N = 336$, $t = 10.9$, $p < .001$).

OBJECTIVE C: At the completion of the week in the Nature-Computer Camp Program, at least 80% of the participants will show maintenance or an increase of a positive attitude toward the program.

The inputs for this objective were also the same as for Objective A. There was, however, one addition - a pre- and posttest attitude scale designed with the assistance of the ECIA Chapter 2 Evaluation Unit. As in the previous objective, discrepancies in the materials and aides did not hamper the attainment of this objective.

The processes that were introduced in the attempt to increase or develop a positive attitude in students towards the program included the following: the establishment of rapport and the maintenance of a cordial relationship between staff and students; exposure to a wide variety of science and computer experiences with different staff members; instruction at the level and speed of learning of the students; the presentation of subject matter in an enjoyable and interesting way; extra-curricula recreation activities selected by students. For the assessment of attitude, students completed the attitude scale on a pre- posttest schedule. All these processes were observed to be in agreement with the intended ones.

For the outcome of the objective, the expectation was that 80% of the students attending camp for a week would show maintenance or an increase of a positive attitude toward the program. Analysis of the responses of students to the NCC Attitude Scale was on the basis of a pre- posttest design using the sign test. The analysis revealed that 98.5% of the students showed an increase of a positive attitude towards the program and that the increase was statistically significant ($N = 336$, $z = 17.7$, $p < .001$).

OBJECTIVE D: Using a set of social expectations established by the staff and student campers, campers will demonstrate appropriate socialization.

Three new inputs were added for this objective in addition to those listed for Objective A. The new inputs were: the definition of a well socialized individual, a list of expected social behaviors, and a Counselor Checklist. Intended and observed inputs were in agreement.

There were no discrepancies between the intended and observed processes. All items were in agreement. Aides held "rap sessions" with the students. At the first session, aides provided students with the definition of a well socialized individual. Students and aides worked together to establish a list of expected social behaviors and to enforce these behaviors. Follow-up rap sessions examined problems encountered on camp and interpersonal relationships and interdependence. All camp students were involved in cooperative activities such as KP duty, dorm clean-up and inspection, camp clean-up and inspection, and a scavenger hunt. At the end of each of the six sessions, the counselors completed the individual student socialization checklist. This was done on Friday during the first session and on Thursdays during the proceeding sessions. The change of day from Friday to Thursday was necessitated by the need to complete the Compuscan Answer Sheets used by both counselors and teachers.

The outcome for objective D stated that the mean score on the counselor checklist on socialization would be 70% or better for students attending camp for a week. Analysis of the ratings of 332 students showed a mean score of 85%, thus exceeding expectations.

Conclusion

With the exception of two inputs (i.e. aides and materials), all other inputs and the processes and outcomes specified for the objectives of the program were observed to be in agreement with the intended. The inputs for which a discrepancy evaluation occured did not affect the progress of the program. Thus, the program was successful in meeting all four objectives.

Decisions

This report will be forwarded to the Project Director, Project Manager, LEA Chapter 2 Director, the Superintendent and the School Board to aid them in their decision-making concerning this project.

EVALUATION DESIGN

PLANNING, MONITORING, AND IMPLEMENTING (PMI)
EVALUATION MODEL FOR DECISION-MAKING

Reporting Form

Goal: The Nature-Computer (Summer Science) Camp program will provide the opportunity for the student camper to develop socio-academic skills emphasizing environmental inter-dependencies and computer literacy.

Objective A: By July, 1983, a Nature-Computer Camp combining science and computer skills for District of Columbia Public School sixth graders, will be established at Camp Round Meadow, Thurmont, MD.

PART I

INPUTS

INTENDED	STATUS	OBSERVED
- Project Manager	Agreement	- The evaluation team met with the project manager.
- Project Coordinator	Agreement	- The evaluation team met with the project coordinator.
- Camp Manager	Agreement	- A meeting was held with the camp manager. He was also observed in operation.
- Elementary school contact persons	Agreement	- Records submitted by the project coordinator testified to the existence of contact persons.
- Six summer camp staff members (teachers)	Agreement	- The camp manager reported that there were six teachers. The team met five of the teachers and observed four teaching.
- Nine aides	Discrepancy	- There were seven aides and one special education aide. Camp personnel reported that the project operated well with the eight aides.

OBJECTIVE A

PART I (continued)

INPUTS

INTENDED	STATUS	OBSERVED
- Pre-enrollment of 80 regular students per week	Agreement	- There was pre-enrollment of 80 regular students per week. Less than this number attended per week.
- Pre-enrollment of 10 special education students per week	Agreement	- There was pre-enrollment of 10 special education students per week. Less than this number attended per week.
- Schedule for six one-week sessions	Agreement	- A schedule for the six one-week sessions was provided to the evaluation team.
- Adequate planning supplies and materials	Discrepancy	- Planning suplies and materials were not adequate. Program staff, however demonstrated initiative and creativity in the development of needed materials.
- Registration forms	Agreement	- A sample of a registration form was provided by the program coordinator.
- Physical evaluation forms	Agreement	- A sample of a physical evaluation form was provided by the coordinator.
- Staff development evaluation instrument	Agreement	- Completed staff development evaluation instruments were provided to the evaluation team.
- Adequate camp area and facilities	Agreement	- Adequate camp area and facilities were observed.

OBJECTIVE A

PART II

PROCESSES †

INTENDED	STATUS	OBSERVED
1a. Project manager will obtain approval of the cooperative agreement and lease with U.S. National Park Service for use of facilities.	Agreement	1a. Project manager reported that cooperative agreement and lease with the U.S. National Park Service for use of facilities was approved by the Department of Procurement.
b. Project manager will approve food service contract with a vendor.	Agreement	b. Project manager reported that she approved food service contract with vendors.
c. Project Manager, Project Coordinator and Camp Director will review material previously used at Camp Round Meadow.	Agreement	c. All materials previously used at Camp Round Meadow were reviewed as evidenced by changes made on curricula.
d. Project Coordinator and staff will update curricula material.	Agreement	d. Project Coordinator and staff updated curricula materials.
e. Project Coordinator and ECIA Chapter 2 Evaluation Unit personnel will update evaluation instruments.	Agreement	e. Evaluation instruments provided by the coordinator were updated by the Evaluation Unit personnel.
f. Project Coordinator and Camp Manager will notify principals and parents about the program.	Agreement	f. Letters were sent out to principals and parents informing them about the program. Samples of letters sent out were provided to the Evaluation Unit.
g. Principal and contact persons will identify eligible students.	Agreement	g. Principal and contact persons identified eligible students. Eligibility was determined on the basis of the results of physical examination, the availability of health insurance and the successful completion of the sixth grade curriculum.

† Processes are numbered to correspond with outcomes

OBJECTIVE A

PART II (continued)

PROCESSES †

INTENDED	STATUS	OBSERVED
h. Project Coordinator and staff will prepare and distribute registration forms and physical evaluation forms.	Agreement	h. Records submitted to the Evaluation Unit revealed that the project coordinator and staff prepared and distributed registration forms and physical evaluation forms.
i. Project Coordinator will schedule participants and notify them of dates of attendance.	Agreement	i. Project Coordinator scheduled participants and notified them of dates of attendance as evidenced by the confirmation letters which were sent out.
j. Project Coordinator and staff will visit the camp site in advance of the program to assure readiness for the program.	Agreement	j. The Project Coordinator verified that she and staff visited the camp site three times in June in preparation for the program.
k. Project Coordinator and staff will arrange transportation for participants.	Agreement	k. The Project Manager verified that the Procurement Department was contacted to make arrangements for the transportation of participants.
l. Camp Manager will order camp supplies and materials.	Agreement	l. The Camp Manager had documents showing that he ordered supplies and materials. These were not all received.
2a. Project Manager, Project Coordinator and Camp Manager will conduct a three-day staff development workshop.	Agreement	2a. Records submitted to the evaluation team revealed that a three-day staff development workshop was held on June 15, 16 and 17 at the camp site. (See Appendix B.)

† Processes are numbered to correspond with outcomes

OBJECTIVE A

PART II (continued)

PROCESSES †

INTENDED	STATUS	OBSERVED
b. Project coordinator will monitor the workshop evaluation.	Agreement	b. The coordinator reported that the workshop evaluation was monitored.
3a. Project staff will keep records of attendance.	Agreement	3a. Records of attendance were observed during the site visit by the evaluation team.
b. Project staff will keep records of activities.	Agreement	b. Project staff kept records of activities, some of which were on display at the camp.
c. Participants will follow the daily schedules.	Agreement	c. Participants followed the daily schedule. This was observed during the visit.
d. Project staff will supervise and teach the students.	Agreement	d. Four project staff members were observed, one teaching geology, two teaching computers and one teaching woodland ecology.
e. Project staff will conduct student assessments.	Agreement	e. Project staff conducted student assessments as evidenced by the assessment data submitted to the Evaluation Unit.

OBJECTIVE A

PART III

OUTCOMES

INTENDED	STATUS	OBSERVED
1. Records submitted by the project coordinator to the ECIA Chapter 2 Evaluation Unit by June 30, 1983, will show that the general administrative duties and planning necessary for establishing the Summer Science Camp have been accomplished.	Agreement	1. Records submitted showed that the general administrative duties and planning necessary for establishing the Summer Science Camp were accomplished. (See Appendix C.)
2. Evaluation of the staff development session will show that 90% of the teachers rated the training as good or better on selected criteria.	Agreement	2. The session was rated on five criteria, each one operative on a different scale. Analysis of staff ratings of the sessions showed that 97% of the teachers rated the training in a highly positive way on the five selected criteria; 92% rated the presentation as exciting; 100% rated the presentation as very clear; 100% rated the training as very clear; 92% indicated that the session greatly evoked or increased interest in the Nature-Computer program; 100% indicated that the workshop objectives were met.
3. Records submitted by the project coordinator to the ECIA Chapter 2 Evaluation Unit by August 31, 1983, will show that the Summer Science Camp was in operation for six 5-day sessions.	Agreement	3. Records of the schedule for the six 5-day sessions of the number of students who registered for each session and of the test data from the pre- and posttests administered in each of the six sessions showed that the Summer Science Camp was in operation for six 5-day sessions.

EVALUATION DESIGN

PLANNING, MONITORING, AND IMPLEMENTING (PMI)
EVALUATION MODEL FOR DECISION-MAKING

Reporting Form

Goal: The Nature-Computer (Summer Science) Camp program will provide the opportunity for the student camper to develop socio-academic skills emphasizing environmental inter-dependencies and computer literacy.

Objective B: At the completion of the week in the Nature-Computer Camp Program participants will demonstrate a significant gain in knowledge in the areas of stream ecology, woodland ecology, and geology and in knowledge about computers.

PART I

INPUTS

INTENDED	STATUS	OBSERVED
- Project Coordinator	Agreement	- The evaluation team met with the project coordinator.
- Camp Manager	Agreement	- A meeting was held with the camp manager. He was also observed in operation.
- Six summer camp staff members	Agreement	- The camp manager reported that there were six teachers. The team met five of the teachers and observed four teaching.
- Nine Aides	Discrepancy	- There were seven aides and one special education aide. Camp personnel reported that the project operated well with eight aides.
- Pre-enrollment of 80 regular students per week	Agreement	- There was pre-enrollment of 80 regular students per week. Less than this number attended per week.
- Pre-enrollment of 10 special education students per week	Agreement	- There was pre-enrollment of 10 special education students per week. Less than this number attended per week.

OBJECTIVE B

PART I (continued)

INPUTS

INTENDED	STATUS	OBSERVED
- Schedule for six one-week sessions	Agreement	- A schedule for the six one-week sessions was provided to the evaluation team.
- Curricula for four content areas	Agreement	- Curricula for the four content areas were provided to the respective teachers.
- Program-designed test to measure knowledge of computers and of three areas of science.	Agreement	- Program-designed test measuring knowledge of the four content areas was revised by the Evaluation Unit.
- 20 computers	Agreement	- Twenty (20) computers were borrowed from the Junior High Science Computer Program. The computers were observed being used.
- Adequate materials and supplies	Discrepancy	- Materials and supplies provided by the project were not adequate. However, teachers and counselors were creative in finding substitutes.
- In-camp bus transportation	Agreement	- The in-camp bus was observed transporting the participants. When it was realized that DCPS bus drivers were not available, staff acquired bus driver licenses to operate the bus.
- Three trails - Wolf Rock Trail, Hog Rock Trail and Owens' Creek Trail.	Agreement	- Three trails were available. Participants were observed starting out on the Hog Rock Trail.

OBJECTIVE B

PART II

PROCESSES †

INTENDED	STATUS	OBSERVED
1a. Under the instruction or supervision and guidance of staff members, students will apply the following processes in each of the areas of the science component of the program: - apply measuring skills and problem solving techniques during investigation; - locate, organize, classify, record and interpret data; - make abstractions and inferences; - make observations, measure and collect data during the hikes.	Agreement	1a. Observations of teachers during instructional time revealed the application of the principles of scientific inquiry. Reports made by the geology teacher and observations made by the evaluation team indicated that he began his classes on the geology trail with a lecture on rocks, their classification and characteristics, minerals and their properties and three soil types. The actual identification, analysis and collection of the various rocks occured during the hike through the trail. Also during this time, students observed the soil at various places and discussed weathering and erosion and the interdependence between animals and plants. Making abstractions and inferences and drawing conclusions from observed data were all conducted on the trail. Among the instruments used was a compass to locate specific objects and for travelling to and from specific points on the geology trail.
2a. Students will participate in classroom activities designed to help them acquire computer literacy as follows:	Agreement	2a. Objectives listed in the computer rooms indicated participation in activities designed for the acquisition of computer literacy such as writing a simple program

† Processes are numbered to correspond with outcomes

OBJECTIVE B

PART II (continued)

PROCESSES †

INTENDED	STATUS	OBSERVED
writing a simple program that works (using Atari graphics); identifying the hardware components that make up a computer; participating in discussions involving the impact computers have, are having, and will have on society; discussing computer related careers and how computers will affect each type of career; receiving information on history of computers and computing devices.		that works (using Atari graphics), identifying the hardware components that make up a computer, participating in discussions involving the impact computers have, are having, and will have on society, discussing computer related careers and how computers will affect each type of career, receiving information on history of computers and computing devices. Evidence of involvement in these activities was found in student scrapbooks, in the types of displays on the walls and in the books made available.
b. Students will take the NCC Knowledge Test.	Agreement	b. All students were tested twice on the NCC Knowledge Test as evidenced by the pre- and posttest data submitted to the ECIA Chapter 2 Evaluation Unit.

† Processes numbered to correspond with outcomes

OBJECTIVE B

PART III

OUTCOMES

INTENDED	STATUS	OBSERVED
1. Analysis of the pre- and posttest scores on the program-designed science test will show a significant increase in the ability to: - classify aquatic organisms, indicate life cycles of various organisms and infer interdependent relationships in a stream environment; - indicate interdependent relationships existing in a forest community and classify the organisms therein as producers, consumers or decomposers; - identify rocks, minerals and soil, classify examples of each group and identify evidence of erosion and weathering.	Agreement	1. Separate analyses of the pre- and posttest scores on the three subtests of the environmental science test showed significant increases in knowledge gained in stream ecology ($N = 336$, $t = 9.13$, $p < .001$), woodland ecology ($N = 336$, $t = 6.15$, $p < .001$), and geology ($N = 336$, $t = 7.76$, $p < .001$). (See Appendix D).
2. Analysis of the pre- and posttest scores on the program-designed computer test will show a significant incease in knowledge about computers.	Agreement	2. Analysis of the pre- and posttest scores on the computer test showed a significant increase in knowledge about computers ($N = 336$, $t = 10.91$, $p < .001$). (See Appendix D).

EVALUATION DESIGN

PLANNING, MONITORING, AND IMPLEMENTING (PMI)
EVALUATION MODEL FOR DECISION-MAKING

Reporting Form

Goal: The Nature-Computer (Summer Science) Camp program will provide the opportunity for the student camper to develop socio-academic skills emphasizing environmental inter-dependencies and computer literacy.

Objective C: At the completion of the week in the Nature-Computer Camp Program, at least 80% of all participants will show maintenance or an increase of a positive attitude toward the program.

PART I

INPUTS

INTENDED	STATUS	OBSERVED
- Project Coordinator	Agreement	- The evaluation team met with the project coordinator.
- Camp Manager	Agreement	- A meeting was held with the camp manager. He was also observed in operation.
- Six summer camp staff members (teachers)	Agreement	- The camp manager reported that there were six teachers. The team met five of the teachers and observed four teaching.
- Nine Aides	Discrepancy	- There were seven aides and one special education aide. Camp personnel reported that the project operated well with the eight aides.
- Pre-enrollment of 80 regular students per week	Agreement	- There was pre-enrollment of 80 regular students per week. Less than this number attended per week.
- Pre-enrollment of 10 special education students per week	Agreement	- There was pre-enrollment of 10 special education students per week. Less than this number attended per week.

OBJECTIVE C

PART I (continued)

INPUTS

INTENDED	STATUS	OBSERVED
- Schedule for six one-week sessions	Agreement	- A schedule for the six one-week sessions was provided to the evaluation team.
- Pre-posttest attitude instrument	Agreement	- A pre- posttest attitude instrument was designed by the Evaluation Unit.
- Adequate camp supplies and materials	Discrepancy	- The supplies and materials provided by the project were not adequate. However, teachers and counselors were creative in finding substitutes.
- Adequate camp area and facilities	Agreement	- Adequate camp area and facilites were observed.

OBJECTIVE C

PART II

PROCESSES †

INTENDED	STATUS	OBSERVED
1a. Attitude pretests will be administered at camp on Mondays.	Agreement	1a. The schedule showed that these tests were administered at 1:00 PM on Mondays. Data submitted testified to the administration of the tests.
b. Students arriving at camp will be greeted in a way that will demonstrate they are welcomed.	Agreement	b. Camp manager reported that staff was friendly to the students upon arrival and maintained a cordial relationship throughout the session. This was observed by the team.
c. Students will have opportunities for a wide variety of science and computer experiences with several different staff members.	Agreement	c. Camp manager reported that students had a wide variety of science and computer experiences with different staff members.
d. Students will be taught at their own level and pace.	Agreement	d. Observation of the instructional process for geology and computers indicated that students were taught at their own level and pace.
e. Camp teachers will present subject matter in an enjoyable way using activities such as "Nature Bingo" and computer games.	Agreement	e. Students reported that subject matter was presented in an enjoyable way.
f. Students will be involved in extracurricular recreation activities.	Agreement	f. Extracurricula recreation activities were scheduled. Student involvement was evidenced by the sign-up forms given by students to the counselors.

† Processes numbered to correspond with outcomes

OBJECTIVE C

PART II (continued)

PROCESSES †

INTENDED	STATUS	OBSERVED
g. Students will have the opportunity to make some choices concerning their extracurricula activities.	Agreement	g. Students were given free choice in the selection of extracurricula activities as evidenced by the sign-up forms.
h. Attitude posttests will be administered at camp on Fridays.	Agreement	h. Data submitted to the Evaluation Unit revealed that attitude posttests were administered at camp on Fridays.

† Processes numbered to correspond with outcomes

OBJECTIVE C

PART II

OUTCOMES

INTENDED	STATUS	OBSERVED
1. Pre- and post-assessment scores submitted by the project coordinator to the Chapter 2 Evaluation Unit by August 1, 1983 will show that 80% of the students attending camp for a week, will show maintenance or an increase of a positive attitude toward the program.	Agreement	1. Analysis of the pre- and posttest scores on the NCC attitude scale using the sign test showed a significant difference between pre- and posttest scores in favor of the latter ($N = 336$, $z = 17.7$, $p < .001$). The analysis also revealed that 98.5% of the students showed an increase of a positive attitude toward the program.

EVALUATION DESIGN

PLANNING, MONITORING, AND IMPLEMENTING (PMI)
EVALUATION MODEL FOR DECISION-MAKING

Reporting Form

Goal: The Nature-Computer (Summer Science) Camp program will provide the opportunity for the student camper to develop socio-academic skills emphasizing environmental inter-dependencies and computer literacy.

Objective D: Using a set of social expectations established by the staff and student campers, campers will demonstrate appropriate socialization.

PART I

INPUTS

INTENDED	STATUS	OBSERVED
- Project Coordinator	Agreement	- The evaluation team met with the project coordinator.
- Camp Manager	Agreement	- A meeting was held with the camp manager who was also observed in operation.
- Six summer camp staff members (teachers)	Agreement	- The camp manager reported that there were six teachers. The team met five of the teachers and observed four teaching.
- Nine Aides	Discrepancy	- There were seven aides and one special education aide. Camp personnel reported that the project operated well with the eight aides.
- Pre-enrollment of 80 regular students per week	Agreement	- There was pre-enrollment of 80 regular students per week. Less than this number attended per week.
- Pre-enrollment of 10 special education students per week	Agreement	- There was pre-enrollment of 10 special education students per week. Less than this number attended per week.

OBJECTIVE D

PART I (continued)

INPUTS

INTENDED	STATUS	OBSERVED
- Schedule for six one-week sessions	Agreement	- A schedule for the six one-week sessions was provided to the evaluation team.
- Definition of a well socialized individual	Agreement	- A definition of a well socialized individual was provided to the evaluation team.
- List of expected behaviors	Agreement	- A list of expected behaviors was provided to the Evaluation Unit.
- Counselor checklist	Agreement	- A counselor checklist was provided by the program staff and revised by the evaluation team.
- Adequate camp supplies and materials	Discrepancy	- The supplies and materials provided by the project were inadequate. However, teachers and counselors were creative in finding substitutes.
- Adequate camp area and facilities	Agreement	- Adequate camp area and facilities were observed.

OBJECTIVE D

PART II

PROCESSES †

INTENDED	STATUS	OBSERVED
1a. Students will be given information on the definition of a well socialized individual.	Agreement	1a. Counselors reported that they provided students with the definition of a well socialized individual during the rap sessions held on Mondays.
b. Students and counselors together will develop a list of social expectations including the pre-established list of expected behaviors.	Agreement	b. A discussion of the pre-established expected social behaviors and the development of a comprehensive list of social expectations were conducted at the Rap Sessions held on Mondays. One such list was observed at the camp. (See Appendix E.)
c. Students will be involved in cooperative activities such as KP duty (cafeteria); dorm clean-up and inspection; camp clean-up and inspection; and a scavenger hunt.	Agreement	c. Students reported involvement in dorm clean-up when scheduled to do so. Schedules of KP and clean-up activities were posted in the dormitories. Students were observed doing KP duty. Camp manager reported that camp clean-up, inspection and scavenger hunt were scheduled and held on Sundays, Mondays and Tuesdays, respectively.
d. Counselors will lead social/interpersonal skills "rap-shops."	Agreement	d. Social/interpersonal skills "rap-shops" were led by counselors as verified by camp personnel.
e. Counselors will complete individual student socialization checklists on Fridays.	Agreement	e. Counselors completed individual student socialization checklists on Friday during the first session and on Thursdays during the proceeding sessions. The change of day from Friday to Thursday was necessitated by the need to complete the Compuscan Answer Sheets used by both counselors and teachers.

† Processes numbered to correspond with outcomes

OBJECTIVE D

PART II

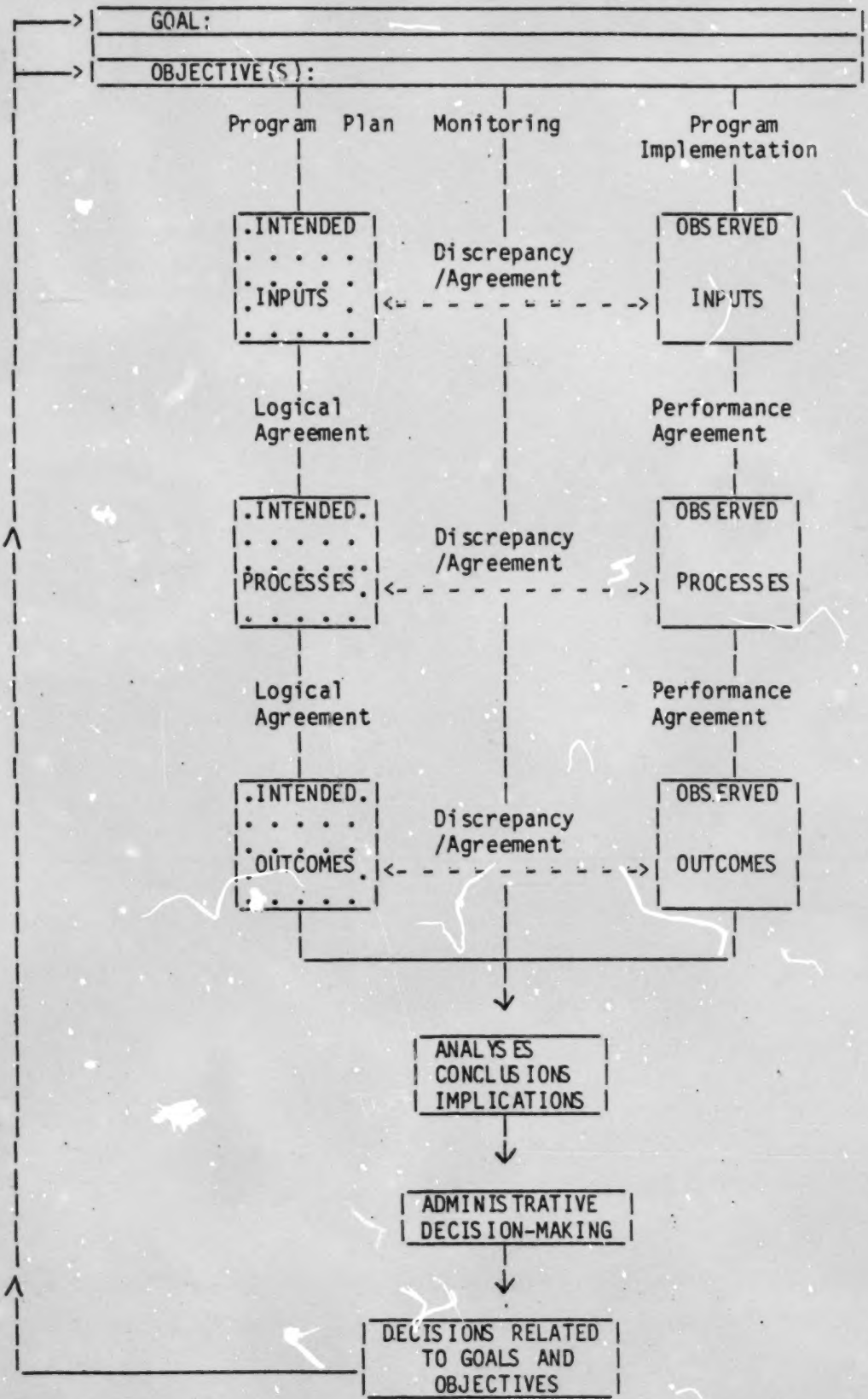
OUTCOMES

INTENDED	STATUS	OBSERVED
1. Post-assessment scores on the counselor checklists on socialization, submitted by the project coordinator to the Chapter 2 Evaluation Unit by August 1, 1983 will show that the mean score of the students attending camp for a week, will be 70% or better.	Agreement	1. Analysis of the rating of 332 students on the counselor checklist showed that the mean score of the students attending camp for a week was 85%. Data for each item in the checklist are shown in Appendix F.

APPENDIX A

EVALUATION MODEL SCHEMA.

EVALUATION MODEL SCHEMA



APPENDIX B

AGENDA FOR STAFF DEVELOPMENT WORKSHOP

Nature Computer Camp
Staff Development Workshop

Camp Round Meadow
Thurmont, Maryland

June 15-17, 1983

Activities

1. General Sessions - Millie Harbeck, Elaine Barton
2. Interpersonal Workshop - Patricia Harrison
3. Safety Workshop - Wendell Boyd, Bill Gray
4. First Aid Seminar -
5. Orientation to Computer Training - Larry Williams
6. Trial Orientation - Elaine Barton, Wendell Boyd
7. Small Group Planning - Teachers, Counselors
8. Consultant - Lucille Leisner

Schedule

Wednesday - June 15th

11:00-12:00 - General Session
12:00-12:45 - Lunch
1:00-2:00 - First Aid Seminar
2:15-4:15 - Trail - Owens Creek
4:30-5:00 - Tour of Facilities
5:30-6:30 - Dinner
7:00-9:00 - Planning (small group)

Thursday - June 16th

7:30-8:30 - Breakfast
9:00-9:30 - General Session
9:45-11:00 - Hog Rock Trail
11:30-1:00 - Lunch
12:30-1:00 - Lunch
1:15-3:15 - Wolf Rock Trail
3:30-5:00 - Workshop - "Developing Interpersonal Relationships"
5:30-6:30 - Dinner
7:00-9:00 - Planning (small group)

Friday - June 16th

7:30-8:30 - Breakfast
9:00-11:30 - Workshop - "Orientation to Computer Training"
12:00-1:00 - Lunch
1:00-1:30 - Closing Session - Evaluation

Small Group Planning Activities

Teachers

1. Construct a skills checklist for the four instructional areas
2. Plan how trails will be utilized
3. Prepare teaching aides

Counselors

1. Construct a checklist of expected behaviors to be used to evaluate each camper
2. Plan interpersonal "rapshop" activities for campers
3. Plan recreational activities

Nature Bingo
Scavenger Hunt

APPENDIX C

CORRESPONDENCE, FORMS AND SCHEDULES FOR PLANNING AND IMPLEMENTING THE NATURE-COMPUTER CAMP

Office of Instruction — Instructional Services Center
Langdon Elementary School
20th and Franklin Streets, N.E. Washington, D.C. 20018

Camp Round Meadow Times!

April 12, 1983

Dear Administrators/Teachers

The District of Columbia Public Schools in cooperation with the National Park Service is conducting a special summer program at Camp Round Meadow in the Catoctin Mountain Park, Thurmont, Maryland.

The program is called a "Nature-Computer" Camp. Students participating in the program will spend one week (Monday-Friday) at the camp and will be involved in both computer and environmental studies. Six camping sessions will held, from July 11 - Aug. 19, 1983. Arrangements will be similar to the outdoor Education Laboratory Program in previous years.

Students now completing the sixth grade are eligible to participate in this program. It is felt that such a program will ease the transition of our students from the Elementary level into the Junior High level and also provide an introduction to computer literacy.

If there are students in your building interested in participating in this program, please complete the enclosed form and, immediately return it. Begin now to ascertain that each student who is interested has a current physical evaluation available. A copy of the physical evaluation form must be attached to each student's registration form. Registration forms and information will be sent to you soon.

Thank you for your cooperation in offering this opportunity to the sixth grade students in your building.

Yours truly,

WJB DEB

Wendell J. Boyd and
Dorothy E. Barton, coordinators
"Nature-Computer" Camp
Phone 576-6580

Intent to Participate Form For

Camp Round Meadow

Summer 1983

_____ Yes, I have students interested in participating in the "Nature-Computer" Camp. Approximate Number_____

_____ No, I do not have students interested in participating.

If answer is yes, please designate a contact person in your building _____
(Name)

Principal's Signature _____

School _____

Date _____

RETURN THIS FORM TO: Mary B. Harbeck
Instructional Services Center
Langdon School, Route 3

DEADLINE: May 2, 1983
First come, First Served

Office of Instruction — Instructional Services Center
Langdon Elementary School
20th and Franklin Streets, N.E. Washington, D.C. 20018

April 18, 1983

Dear Parent/Guardian:

The District of Columbia Public Schools in cooperation with the National Park Service is conducting a special "Nature-Computer" camp program from July 11-August 19, 1983. The program will take place at Camp Round Meadow in the Cactoctin Mountain Park at Thurmont, Maryland.

Students now completing the sixth grade are eligible to participate, provided they have proof of a recent physical evaluation and current health insurance protection.

This is indeed, a unique and exciting opportunity for your child to get a hands-on experience with computers and the natural environment in a camp setting at no cost to you. In addition, we feel that the week-long involvement in the scheduled activities will help ease the transition of your child from the Elementary to the Junior High School level.

A competent staff of resident teachers, counselors and a camp director will provide instruction and supervision for student campers at the campsite. If you would like your child to participate in the "Nature-Computer" camp program please complete the registration and consent form and return to your child's school immediately. Eligible participants will be scheduled on a first come first served basis.

Yours truly,

Wendell Boyd
Dorothy E. Barton

Wendell J. Boyd and
Dorothy E. Barton, Coordinators
"Nature Computer" Camp
Phone: 576-6580

ROUND MEADOW NATURE-COMPUTER CAMP

Instructional Services Center
Langdon Elementary School
20th & Evarts Streets, N. E.
Washington, D. C. 20018

ROUND MEADOW NATURE COMPUTER CAMP
CATOCTIN MOUNTAIN PARK THURMONT, MARYLAND

REGISTRATION

NAME:_____ DATE OF BIRTH:_____
(Please Print)

HOME ADDRESS:_____ ZIP CODE:_____ TELEPHONE:_____

SCHOOL_____ TEACHER'S NAME:_____

EMERGENCY CONTACT: (Please Print)_____

DAY PHONE:_____ NIGHT PHONE:_____

HEALTH INSUPANCE PROVIDED: COMPANY_____

POLICY NUMBER_____

Parent's or Guardian's Consent:

I hereby request that_____ be permitted to attend Round Meadow Camp at Thurmont, Maryland and participate in all the activities of the Nature Computer Camp Program from_____ to_____. With the understanding that the utmost care will be taken to insure my child's safety and welfare, I authorize the Camp Director to act for me according to his best judgement and ability in any emergency that may arise requiring medical care or otherwise.

I understand that my child must have a physical examination before he/she can attend. If this examination cannot be done by the school physician, I will be prepared to take my child to a neighborhood health clinic or my personal physician.

DATE:_____ _____
Signature of Parent or Guardian

_____
(Please PRINT Parent/Guardin Name on This Line.)

Dorothy E. Barton & Wendell J. Boyd
Project Coordinators

TELEPHONE: 576-6580

Office of Instruction — Instructional Services Center
Langdon Elementary School
20th and Franklin Streets, N.E. Washington, D.C. 20018

June 1, 1983

Dear Parent:

We are very pleased to confirm your child's participation in the Nature Computer summer camping program. Students will attend the program for one week at Round Meadow Camp in Thurmont, Maryland.

You have already received a list of items which each child should bring to the camp. Buses will pick up students for each session on Monday mornings at 8:30 and will return them to the pick-up point on the following Friday around 3:00 in the afternoon.

Your child will attend the _____ session from _____ to _____. The buses will pick up students for this session at Langdon Elementary School, located at 20th and Evarts Streets, N.E.

If for any reason, your child cannot attend camp on the dates listed above, please notify Mrs. Mary Harbeck immediately, so that an alternate camper can be selected. If you have further questions or concerns, please contact Mrs. Harbeck, Instructional Services Center, Langdon School, 576-6580.

We are looking forward to seeing your child at camp.

Dorothy E. Barton

Dorothy E. Barton
Camp Coordinator

Office of Instruction — Instructional Services Center
Langdon Elementary School
20th and Franklin Streets, N.E. Washington, D.C. 20018

June 2, 1983

Memorandum To: Regional Assistant Superintendents
Dr. Reuben Pierce, Region A
Dr. Sheila Handy, Region B
Dr. William H. Brown, Region D

From: Dr. James T. Guines
Associate Superintendent

Subject: Planning days for the Nature-Computer Camp

The Staff Development Workshop for the Nature-Computer Camp is to be held on June 15, 16 and 17 at Camp Round Meadow, Thurmont, Md. These were the only available dates prior to the opening date for our camp program, which will be held July 11 - Aug. 19.

We would appreciate your support in making it possible for the teachers listed below to attend this workshop, by having them excused from their regular teaching duties for three/five days, June 13, 14, 15, 16, and 17, as listed. All but two of them are elementary science resource teachers. Mrs. Barton and Mr. Boyd are the coordinators of the camp.

1. Elaine Barton - Moten School - needed June 13-17
2. Wendell Boyd - Janney, Stoddert - needed June 13-17
3. Sarah Brown - Ketcham - needed June 15-17
4. Theodore Maveritte - West - needed June 15-17
5. Thomas Simpson - Walker-Jones - needed June 15-17
6. Laurence Rinehart - Eliot - needed June 15-17
7. Veronica Frazier - Lafayette - needed June 15-17

Thank you for considering this request.

NATURE - COMPUTER CAMP

SCHEDULE OF EVENTS

ROUND MEADOW
THURMONT, MD.

MONDAY

8:45 - Buses leave D.C.

10:30 - Buses arrive at Round Meadow

10:45 - Orientation - dorm assignments, general rules and regulations (Outside - in cafeteria if raining)

11:30 - Settling in dorms (Counselors making sleeping assignments)

12:15 - Lunch (Cafeteria Style) all groups

1:00 - 1:55 - Pre-test Teachers (with homeroom groups)

Micro - Chips - Sara (upstairs dogwood)
Trailblazers - Ted (downstairs dogwood)
Backpackers - Thomas (rear of cafeteria)
Loopers - Mary (country store)

Counselor's "Rap Shop" (staff lounge)

2:00 - 2:55 - "Rap Shop" all groups with counselors

3:00 - 3:55 - Computer Orientation - Loopers (Veronica & Jan)
Arts & Crafts (upstairs dogwood) - Micro-Chips (Sarah, Eric & Lisa)

4:00 - 4:55 - Computer Orientation - Backpackers (Lawrence & Robin)
Arts and Crafts - Trailblazers, (Rhonda & Davin) (upstairs dogwood)
Trails Orientation, movie "Nature's Half Acre" (downstairs dogwood) Loopers and Micro-Chips (Thomas, Kimberly & Rod)

5:15 - KP's to Cafeteria

5:30 - Dinner (family style)

6:30 - 7:55 - Computer orientation - Micro Chips (Veronica & Kevin)
Arts and Crafts - Loopers (upstairs dogwood)
(Mary & Jan)
Recreational Activities - Trailblazers and Backpackers,
Lisa, Davin, Robin, Eric & Ted

8:00 - 9:25 - Computer Orientation - Trailblazers (Lawrence & Davin)
Arts and Crafts - Backpackers (upstairs dogwood)
(Rhonda & Robin)
Recreational Activities - Loopers and Micro-Chips
Jan, Rod, Kim, Kevin & Sarah

9:00-- Preparation for bed

TUESDAY

7:00 - Wakeup

7:30 - KP's to cafeteria
Aerobics (All Staff)

7:45 - Breakfast(family style) all groups and staff

8:30 - 8:50 - cleaning dorms - counselors

9:00 - 12:00 - Classes (all groups)

Loopers - Stream Ecology (Ted & Jan)
Backpackers - Woodland Ecology (Sarah & Eric)
Trailblazers - Computers (Veronica & Davin)
Micro-Chips - Computers (Lawrence & Kimberly)

12:00 - 12:45 - Lunch (cafeteria style)

12:00 - 1:00 - free time

1:00 - 4:00 Classes (all groups)
Loopers - Computers (Veronica & Rod)
Backpackers - Computers (Lawrence & Robin)
Trailblazers - Geology (Thomas & Lisa)
Micro-Chips - Woodland Ecology (Sarah & Kevin)

4:15 - 5:10 - Extracurricular Activities (all groups with their counselors)

5:15 - KP's to cafeteria

5:30 - Dinner (family style) (all groups)

6:30 - 7:25 - Nature Scavenger Hunt (all groups)
Trailblazers - (Ted & Lisa & Davin)
Backpackers - (Thomas & Robin & Eric)
Loopers - (Mary & Jan & Rod)
Micro-Chips - (Sarah & Kim & Kevin)

7:30 - 8:30 - Computer Practice - Loopers and Backpackers (Ted, Robin & Eric & Jan & Davin)

8:35 - 9:35 - Computer Practice - Micro-Chips and Trailblazers (Mary, Davin & Lisa & Kim & Kevin)
Nature Bingo - Loopers & Backpackers (Lawrence, Janis & Robin & Eric & Rod)

9:35 - Preparation for bed

10:15 - Lights Out

WEDNESDAY

7:00 - Wakeup

7:30 - KP's to cafeteria

7:45 - Breakfast - all groups and staff (family style)

8:30 - Aerobics

9:00 - 12:00 - Classes (all groups)
Loopers - Computers (Lawrence & Jan)
Backpackers - Computers (Veronica & Eric)
Trailblazers - Stream Ecology (Thomas & Kevin)
Micro-Chips - Geology - (Thomas & Kimberly)

12:00 - 12:45- Lunch (cafeteria style)

12:45 - 1:00 - Free time

1:00 - 4:00 - Classes (all groups)
Loopers - Woodland Ecology - (Sarah & Rod)
Backpackers - Geology - (Thomas & Robin)
Trailblazers - Computers - (Lawrence & Lisa)
Micro-Chips - Computers - (Veronica & Kevin)

4:15 - 5:15 Extracurricular Activities (all groups with their counselors)

5:15 - KP's to cafeteria

5:30 - Dinner (family style) all groups & staff

6:30 - 7:30 Recreational Activities (all groups) (Mary & all counselors)

7:30 - 8:30 - Computer Practice - Loopers and Backpackers (Thomas, Janis & Rod & Robin & Eric
Extracurricular Activities - Trailblazers and Micro-Chips (Mary, Davin, Lawrence & Lisa & Kevin & Kimberly, and other needed staff.

8:35 - 9:35 - Computer Practice - Trailblazers and Micro-Chips (Sarah, Kimberly & Kevin & Davin & Lisa)
Extracurricular Activities (Mary, Robin, Ted, and other needed staff) (Robin, Rod, Jan, Eric)

9:35 - Preparation for bed

10:15 - Lights out

THURSDAY

7:00 - Wakeup

7:30 - KP's to cafeteria

7:45 - Breakfast (family style) all groups & staff

8:30 - Aerobics

9:00 - 12:00 - Classes (all groups)
Loopers - Geology - (Thomas & Jan)
Backpackers - Stream Ecology - (Ted & Robin)
Trailblazers - Computers - (Veronica & Davin)
Micro-Chips - Computers - (Lawrence & Kevin)

12:00 - 12:45 - Lunch

12:45 - 1:00 - Free Time

1:00 - 4:00 Classes (all groups)
Loopers - Computers - (Veronica & Rod)
Backpackers - Computers - (Lawrence & Eric)
Trailblazers - Woodlawn Ecology - (Sarah & Lisa)
Micro-Chips - Stream Ecology - (Ted - Kimberly)

4:15 - 5:15 Extracurricular Activities (all groups with their counselors)

5:15 - KP's to cafeteria

5:30 - Dinner (family style) all groups & staff

6:30 - 8:30 Mini-Olympics (staff) all groups

8:30 - 9:30 Simulated Campfire all groups & staff

FRIDAY

7:00 - Wakeup

7:30 - KP's to cafeteria

7:45 - Breakfast - (family style) all groups and staff

8:30 - Aerobics

9:00 - Post - Tests (all groups) teachers with homeroom group
Loopers - country store - Mary
Micro-Chips - upstairs dogwood - Sarah
Trailblazers - downstairs dogwood - Ted
Backpackers - rear of cafeteria - Thomas

10:00 - "Rap Shop"Counselors (with their groups)

11:15 - Camp Shakedown

12:00 - Lunch

12:30 - Board buses for D.C.

FRIDAY

7:00 - Wakeup

7:30 - KP's to cafeteria

7:45 - Breakfast - (family style) all groups and staff

8:30 - Aerobics

9:00 - Post - Tests (all groups) teachers with homeroom group
Loopers - country store - Mary
Micro-Chips - upstairs dogwood - Sarah
Trailblazers - downstairs dogwood - Ted
Backpackers - rear of cafeteria - Thomas

10:00 - "Rap Shop"Counselors (with their groups)

11:15 - Camp Shakedown

12:00 - Lunch

12:30 - Board buses for D.C.

Allocation of Spaces at Nature-Computer Camp

Region	No. of Schools with 6th Grade	% of Schcols Within System	No. of Schools Resp.	Spaces Allocated	% of Spaces Alloted
A	29	24%	16	112	23%
B	22	18%	15	105	22%
C	27	23%	13	91	19%
D	43	35%	24	168	35%
				476	99%

* Data based on responses received by deadline of May 2, 1983

APPENDIX D

DATA SUMMARY OF NATURE-COMPUTER
CAMP KNOWLEDGE TEST

Table Showing the Means, Standard Deviations, T Value, Degrees of Freedom and Two-Tailed Probabilities for the Computer, Stream Ecology, Woodland Ecology and Geology Subtests of the NCC knowledge Test.

Variable		Number Of Cases	Mean	Standard Deviation	Standard Error	T Value	Degrees Of Freedom	2-Tail Prob.
Computers	Pretest	336	5.2798	1.828	0.100	7.48	335	0.000
	Posttest		6.3155	1.781	0.097			
Stream	Pretest	336	2.9792	1.256	0.069	9.13	335	0.000
	Posttest		3.8542	1.159	0.063			
Woodland	Pretest	336	3.2113	1.462	0.080	6.15	335	0.000
	Posttest		3.9196	1.509	0.082			
Geology	Pretest	336	1.5030	1.022	0.056	7.67	335	0.000
	Posttest		2.1577	1.237	0.067			
Environmental Science Total*	Pretest	336	7.6935	2.615	0.143	10.91	335	0.000
	Posttest		9.9315	2.846	0.155			

* Made up of stream, woodland and geology.

APPENDIX E

A SAMPLE OF EXPECTED SOCIAL BEHAVIORS

A Sampl[illegible] of Expected Social Behaviors

Objective: Using a set of appropriate social expectations established by the staff and student campers, campers will demonstrate maintenance or improvement in each.

The well socialized individual is one whose behaviors are appropriate to the expectations set by the social groups with which he interacts.

Suggestions for evaluation:

1. If all the campers agree to do something that you do not care to do, you should refuse to help them.
2. Students who do not follow the camp rules and regulations are poor campers.
3. A camp director should not expect you to do tasks (things) which you are not willing to do.
4. It is necessary to respect the rights of others when you are living and working with them.
5. All campers should share the responsibility of keeping the camp facilities and the camp grounds clean.

Activities

1. KP duty (cafeteria)
2. Scavenger hunt
3. Dorm Clean-up and inspection
4. Camp clean-up and inspection
5. Interpersonal skills "rap-shop"

Counselor Checklist

1. Respects the rights of others
2. Follows camp rules
3. Participates in trail activities
4. Participates in computer activities
5. Uses equipment with care
6. Interacts with other campers

7. Is curiouss and investigative

8. Helps to keep domitory clean

9. Completes assignment on time

Expected Behavior - Students

1. Follow rules and reglations of the camp

2. Respect the rights of others

3. Share in keeping camp facilities and grounds clean

4. Participate in all camp activities

5. Report to camp activities on time

6. Refrain from use of profanity/abusive language

7. Practice safety rules on trails and at campsite

8. Expect to be supervised at all times

9. Remain within the boundaries of the camp from time of arrival to departure

10. Stay away from unsupervised areas.

Students will participate in classroom activities designed to help them acquire computer literacy by:

1. Writing a simple program that works (using Atari graphics).

2. Identifying the hardware components that make up a computer.

3. Participating in discussions involving the impact computers have, are having, and will have on society.

4. Becoming familiar with computer related careers and how computers will affect each type of career.

5. Knowing a history of computers and computing devices.

APPENDIX F

DATA SUMMARY OF NATURE-COMPUTER CAMP
COUNSELOR CHECKLIST

Nature Computer Camp Counselor Checklist

	All Of The Time		Most Of The Time		Part Of The Time		Never		Don't Know		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Follows camp rules and regulations	149	45	143	43	39	12	1	<1	0	-	332	100
Keeps camp facilities and grounds clean	223	70	91	27	8	2	0	-	0	-	332	99
Uses camp equipment with care	228	69	94	28	10	3	0	-	0	-	332	100
Remains within the boundaries of the camp at all times	251	76	72	22	9	3	0	-	0	-	332	101
Practices safety rules on trails and at the campsite	183	55	126	38	23	7	0	-	0	-	332	100
Stays away from unsupervised areas	206	62	104	31	22	7	0	-	0	-	332	100
Participates in camp activities	217	65	81	24	32	10	2	1	0	-	332	100
Reports to camp activities on time	198	60	100	30	33	10	1	<1	0	-	332	100
Completes assignments on time	184	55	83	25	8	2	0	-	57	17	332	99
Follows instructions of camp personnel	161	48	119	36	49	15	3	<1	0	-	332	99
Is not verbally abusive	166	50	107	32	50	15	9	3	0	-	332	100
Is not physically abusive	184	55	122	37	25	8	1	<1	0	-	332	100
Is cooperative	168	51	113	34	46	14	5	1	0	-	332	100
Maintains a good relationship with other campers	192	58	107	32	30	9	3	0	0	-	332	99
Maintains a good relationship with teachers and counselors	200	60	96	29	29	9	7	2	0	-	332	100
Total	2,920	59	1,558	31	413	8	32	1	57	1	4,980	100
Weighted Score	x 4		x 3		x 2		x 1					
	11,680	+	4,674	+	826	+	32	= 17,212				

17,212 ÷ 4,923* = 3.5 ÷ 4 = 85% (mean rating)

* Total (4,980) minus "Don't Knows" (57)